

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF COMMERCIAL FISHERIES

CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY

August 1960

Part II—Fishing Information*

Sea-surface temperatures, fishing and research information
of interest to the West Coast tuna-fishing industry
and marine scientists

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Bureau of Commercial Fisheries
Biological Laboratory
P. O. Box 6121, Pt. Loma Station
San Diego 6, California

* Part I - "Fishery Products Production and Market Data" is issued by the Bureau of Commercial Fisheries, Market News Service, Post Office Building, San Pedro, California

FINAL NOTICE

Recipients of the July 1960 issue of Part II - FISHING INFORMATION of the CALIFORNIA FISHERY MARKET NEWS MONTHLY SUMMARY were advised to complete and return the accompanying Request Form within 30 days if they wished to receive the publication regularly. Regulations of the Congressional Joint Committee on Printing and Binding require verification of mailing lists for the free distribution of Government publications. A Request Form is provided on a back page of this issue for those who failed to return the previous one. This is the final notice on this subject. If the form is not returned, we are obliged to withdraw your name from the mailing list.

TOPOGRAPHIC CHART NO. 5

Topographic Chart No. 5, which shows the character of the ocean floor in the area between 17° N. and 23° N. latitude and offshore from the Mexican coast to 110° W. longitude, was printed in August. Many of you have already received a copy. Tropical tuna fishermen keeping logbook records for the Inter-American Tropical Tuna Commission may ask for copies from the Tuna Commission representative who contacts you. The latter agency has kindly offered to assist us in the distribution of the topographic charts. Others may forward their requests to our San Diego address.

NAVY VESSELS TROLL FOR ALBACORE

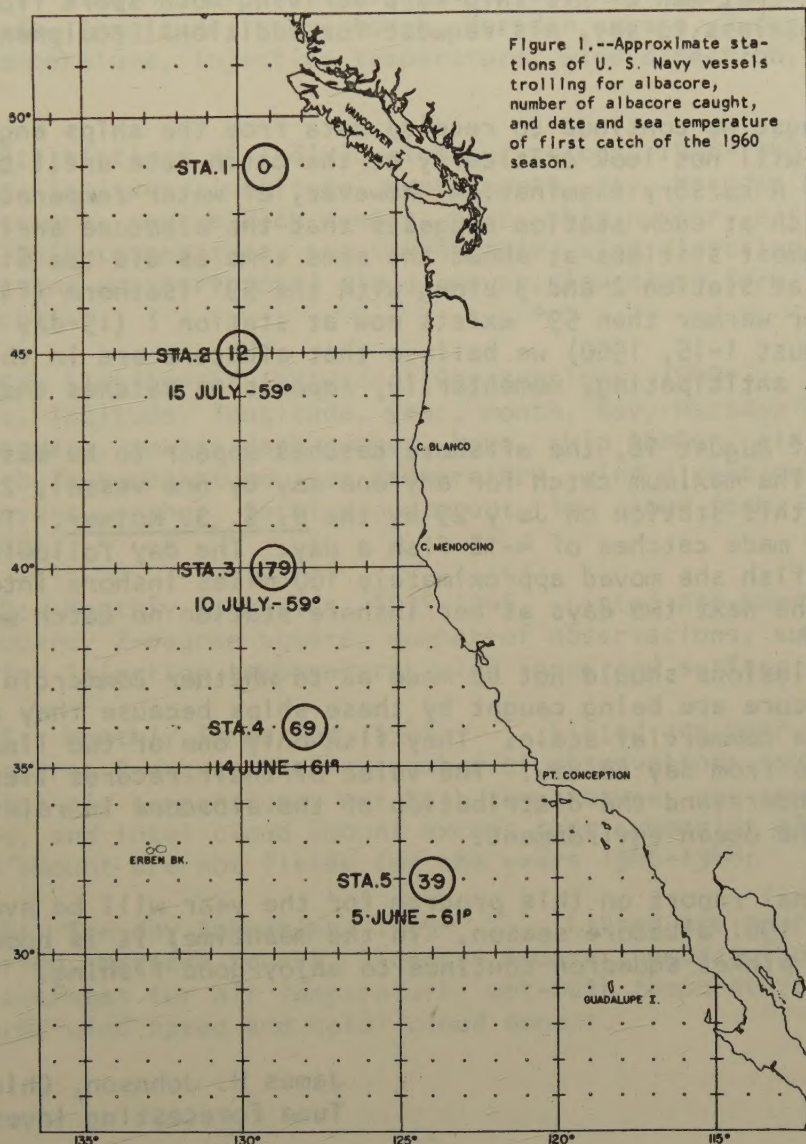
Ships of the U. S. Navy, Radar Picket Squadron One, are trolling for albacore to assist the U. S. Bureau of Commercial Fisheries' Tuna Oceanography Program in its attempt to unravel some of the 'unknowns' surrounding the migration and distribution of albacore.

Scientists have long been perplexed as to reasons for the spectacular variations in the availability of the albacore to our west coast fishermen. In 1933, for example, the catch was a mere 487 pounds, whereas in 1950 nearly 30,000 tons were landed in California alone. Since the inception of the albacore fishery off the Oregon-Washington coast in 1937, the catch in that region has ranged from a low of 300 tons in 1954 to a high of 17,000 tons in 1944. One hypothesis proposed to explain these fluctuations is that from year to year the actual number of albacore remains rather constant, but in response to a variable ocean climate, the albacore instead of migrating into our coastal waters, remains several hundred miles offshore and thus is not available to our fishermen. Another problem that has plagued researchers and fishermen is that of determining just where to expect the albacore to make its appearance each year. Obviously, the sooner the fisherman "gets on" the tuna the greater his catch will be for the season. Biologists from the California Department of

Fish and Game have made excellent strides in solving this latter problem by making pre-season scouting cruises and by predicting the appearance of the albacore on the basis of catches from this cruise and from water temperature.

The value of sea-temperature as a forecasting tool of albacore distribution has been amply demonstrated during the last four years. The years 1957-1959 are well-known as warm water years off the southern California coast. In these years the albacore appeared farther to the north than usual; this year (1960) the ocean surface waters are considerably cooler off the southern California coast as is indicated by our monthly temperature charts of January-July, and as was expected, the albacore appeared farther to the south than they did in 1959.

Radar picket ships when on station are ideally positioned to acquire significant data regarding albacore migration and distribution (figure 1). Eleven vessels of the AGR and DER type rotate duty at



the five stations; a ship remains on station approximately a month at a time and each of the five stations is manned continuously. The primary mission of these ships is to provide early warning of any airborne threat to the U. S. along the Pacific Coast. They are normally able to troll periodically each day, and to report significant catches by radio, with no interference to their military mission. Commander Kirk, Commodore of the Squadron, was approached in April of this year as to the feasibility of running a trolling program from his vessels. He warmly welcomed the idea both from the standpoint of advancing our tuna oceanography research program, and from realizing that here was an opportunity to provide a recreational program to the men of his squadron.

The first catch of the season was reported at station 5 (fig. 1) on June 5 by the U. S. S. Koiner. For the next two and one-half weeks the Koiner repeatedly reported catches and sighting schools of albacore, possibly of commercial quantities, that were migrating through her area. Upon returning to port the Captain of the Koiner requested additional trolling equipment in order to continue the program at his next station; he indicated that men of his ship were deriving much sport from the program. Needless to say, his request for additional equipment was fulfilled.

Because we continue to receive data from the ships engaged in this program, we will not look critically at the catch data until the end of the season. A cursory examination, however, of water temperature and date of first catch at each station suggests that the albacore arrived at the two southernmost stations at about the same time as did the 61° isotherm and arrived at station 2 and 3 along with the 59° isotherm (fig. 1). Because water warmer than 59° exists now at station 1 (15-day temperature chart of August 1-15, 1960) we believe that albacore are in this general area and are anticipating, momentarily, reports of catches there.

As of August 16, the offshore catches appear to be best at station 3. The maximum catch for any one day by one vessel, 21 fish, was made at this station on July 29 by the U. S. S. Koiner. The week previous she made catches of 4-12 fish a day. The day following her catch of 21 fish she moved approximately 100 miles inshore into cooler water; for the next two days at her inshore station no catch was logged.

Conclusions should not be made as to whether commercial quantities of albacore are being caught by these ships because they are not trolling on a commercial scale. They fish only one or two lines for short periods from day to day. The value of their records lies in helping us understand the distribution of the albacore in relation to changes in the ocean environment.

A final report on this program for the year will be available prior to the 1961 albacore season. In the meantime, it is hoped that ships of the picket squadron continue to enjoy good fishing.

James H. Johnson, Chief
Tuna Forecasting Investigation

AVAILABILITY OF HISTORICAL OCEANOGRAPHIC AND MARINE METEOROLOGICAL DATA

The U. S. Bureau of Commercial Fisheries Biological Laboratory, Stanford, California, is investigating the relationship between broad-scale oceanic changes and the abundance and availability of important open-ocean fishes. In the course of this investigation, the Stanford laboratory has obtained listings of oceanographic and marine meteorological observations from the National Weather Records Center, Asheville, North Carolina, for the region of the Pacific Ocean north of 20° S. latitude.

Listings are in six different sets; each set is identified by letter. Information contained in each of the different sets is as follows:

Data Set A: Listings of Individual Observations, 1935-1945. Listed are latitude, longitude, year, month, Marsden square, 2-degree square, surface temperature, injection temperature, wind direction, and wind force;

Data Set B: Listings of Individual Observations, 1946-1948. Listed are octant, latitude, longitude, year, month, day, Marsden square, 2-degree square, source deck number, hour, ship number, air temperature, wet-bulb temperature, sea temperature, wind direction, wind speed, present weather, total cloud amount, low cloud form, and low cloud amount;

Data Set C: Listings of Individual Observations, 1949- . Listed are octant, latitude, longitude, year, month, day, Marsden square, 2-degree square, source deck number, hour, ship number, air temperature, wet-bulb temperature, sea temperature, wind direction, wind speed, present weather, total cloud amount, low cloud form, and low cloud amount;

Data Set D: Monthly Summaries, 1935-1945. Listed are year, month, Marsden square, 2-degree square, number of observations, sums and averages for injection temperature, wind force and surface temperature;

Data Set E: Monthly Summaries, 1946- . Listed are year, month, Marsden square, 2-degree square, number of observations, sums and averages for air temperature, wet-bulb temperature, sea temperature, wind speed, and total cloud amount except that summaries of wind speed and cloud amount are not listed for the years 1946-1948;

Data Set F: Ten-day Summaries, 1949- . Listed are year, month, 10-day period, Marsden square, 2-degree square, number of observations, sums and averages for air temperature, wet-bulb temperature, sea temperature, wind speed and total cloud amount.

Books containing the listings may be consulted at either of the addresses given below. When not in use, the books are available for inter-library loan on a limited time basis.

U. S. Bureau of Commercial Fisheries
Biological Laboratory
450-B Jordan Hall
Stanford, California

U. S. Bureau of Commercial Fisheries
Biological Laboratory
P. O. Box 6121, Pt. Loma Station
San Diego 6, California

SEA-SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN
AUGUST 1960

Acknowledgements

The following organizations and stations contributed data for the August 1960 charts:

U. S. Weather Bureau, San Diego, California
U. S. Navy Fleet Weather Facility, North Island, San Diego, California
U. S. Naval Communication Station Balboa, Fort Amador, Canal Zone
U. S. Navy Branch Hydrographic Offices, Honolulu, Hawaii; Seattle, Washington; San Francisco and Wilmington, California
U. S. Coast Guard, Port Hueneme Light Station, Port Hueneme, California
U. S. Bureau of Commercial Fisheries, Biological Laboratories, Honolulu, Hawaii; La Jolla California; Seattle, Washington
U. S. Bureau of Commercial Fisheries, Exploratory Fishing and Gear Research Base, Seattle, Washington
Hopkins Marine Station, Pacific Grove, California, by J. P. Balesteri
Humboldt State College by George Allen
Inter-American Geodetic Survey by Rene Cortes at Salina Cruz, Mexico; David Ortega at Manzanillo, Mexico; Romeo Valencia at Pt. San Jose, Guatemala; Luis Lynch at Pt. Armuelles, Panama; V. E. Castillo at Tumaco, Colombia; Gualberto Tapia at San Cristobal, Galapagos; Jose Lanchimba at La Libertad, Ecuador; Raul Celis at San Juan, Peru; C. Gamarra at Talara, Peru
Inter-American Tropical Tuna Commission, La Jolla and Terminal Island, California
Kelco Company, San Diego, California
Newport Beach Life Guard Service, Balboa, California

Oregon State College by Bruce Wyatt
Pacific Oceanographic Group, Nanaimo, B. C., by H. J.
Hollister from observations by R. W. Collins at
Kains Island Light, J. A. Bournazel at Cape St.
James Light, B. Stuart at Amphitrite Point Light,
J. M. Hartt at Langara Island Light, and the North
Pacific Oceanic Survey cruise of the Whitethroat
Scripps Institution of Oceanography, La Jolla, California,
by Margaret Robinson and Hans Klein
Ships Frances Salman, Trolleggen and Avila

Charts

Figure 1.--Mean sea-surface temperatures ($^{\circ}\text{F}$) derived from approximately 8000 observations. Squares show temperature at weather-ship stations. Numerals on shore are temperatures at coastal and light stations.

Figure 2.--Deviation of sea-surface temperatures ($^{\circ}\text{F}$) from 30-year mean charts of H. O. 225. Hatched areas are colder than mean.

Figure 3.--Deviation of sea-surface temperatures ($^{\circ}\text{F}$) from those of August 1959. Hatched areas are colder than 1959.

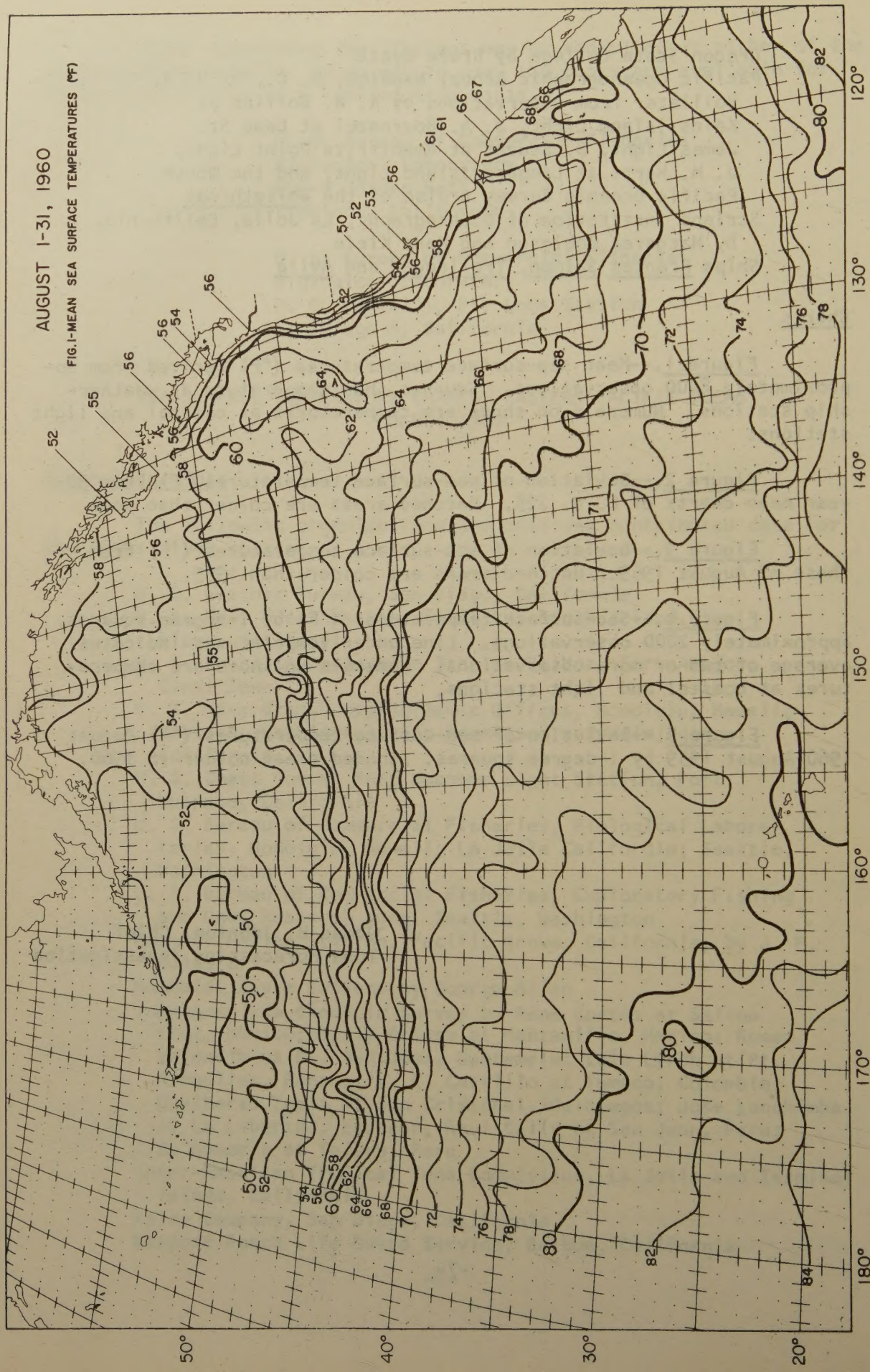
Figure 4.--Sea-surface temperatures ($^{\circ}\text{F}$) by 1-degree squares, approximately 2000 observations. Line under temperatures indicates average of two or more observations. Numerals on shore are temperatures at coastal and light stations.

Figure 5.--Deviation of sea-surface temperatures ($^{\circ}\text{F}$) August 1960-August 1959 by 1-degree squares. Shaded areas colder in 1960.

James H. Johnson, Chief
Tuna Forecasting Investigation

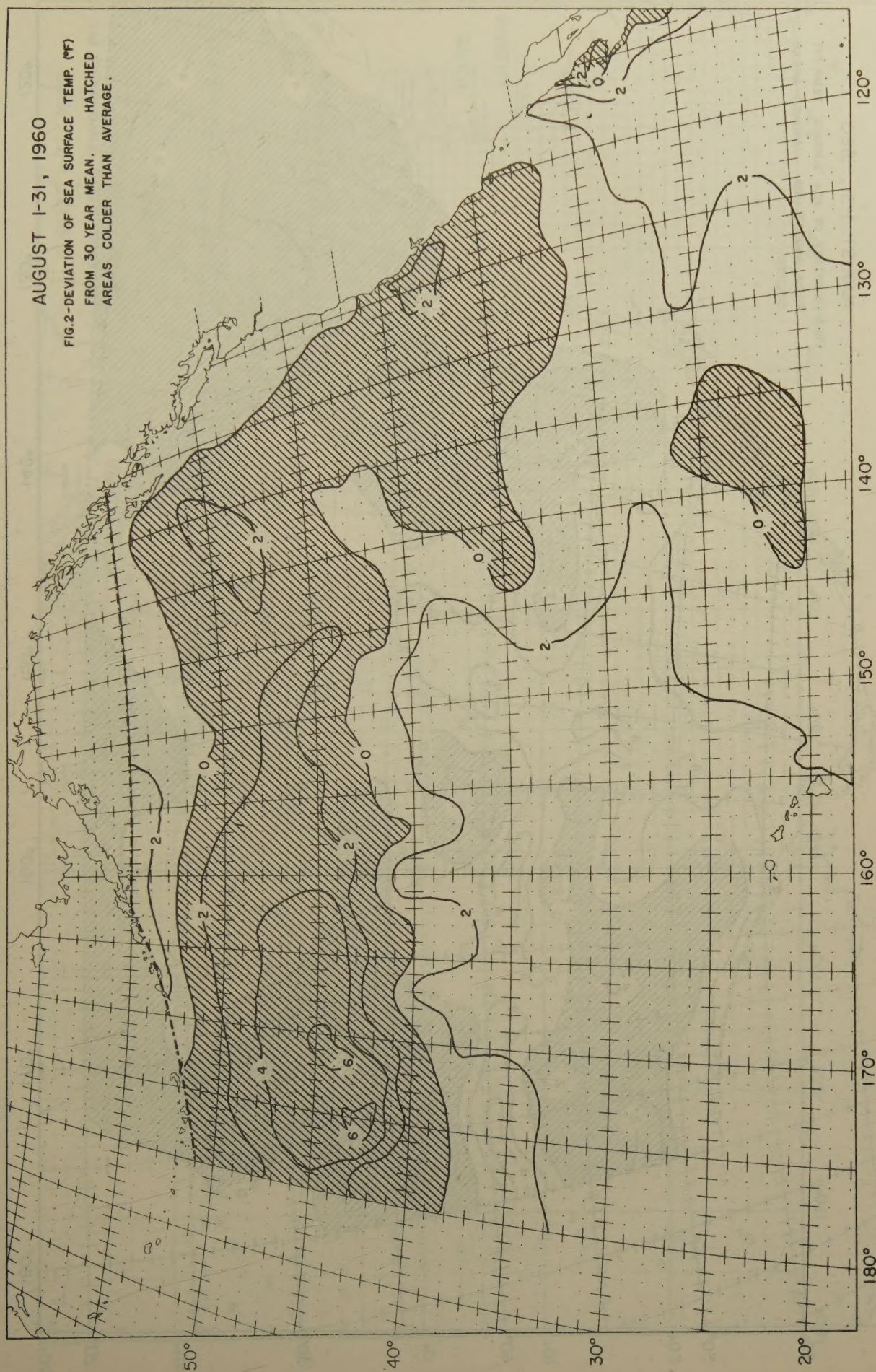
AUGUST 1-31, 1960

FIG. 1-MEAN SEA SURFACE TEMPERATURES (°F)



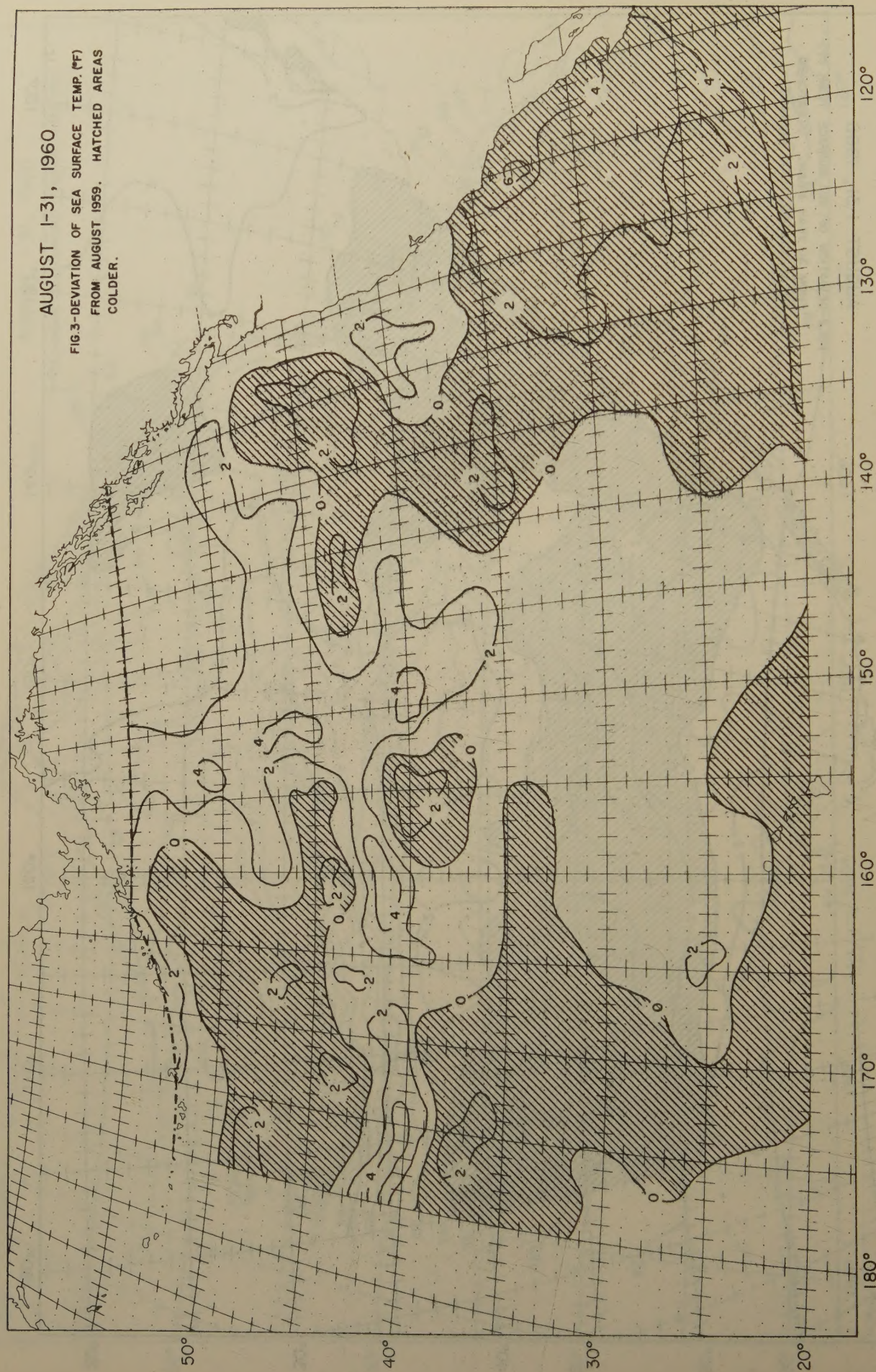
AUGUST 1-31, 1960

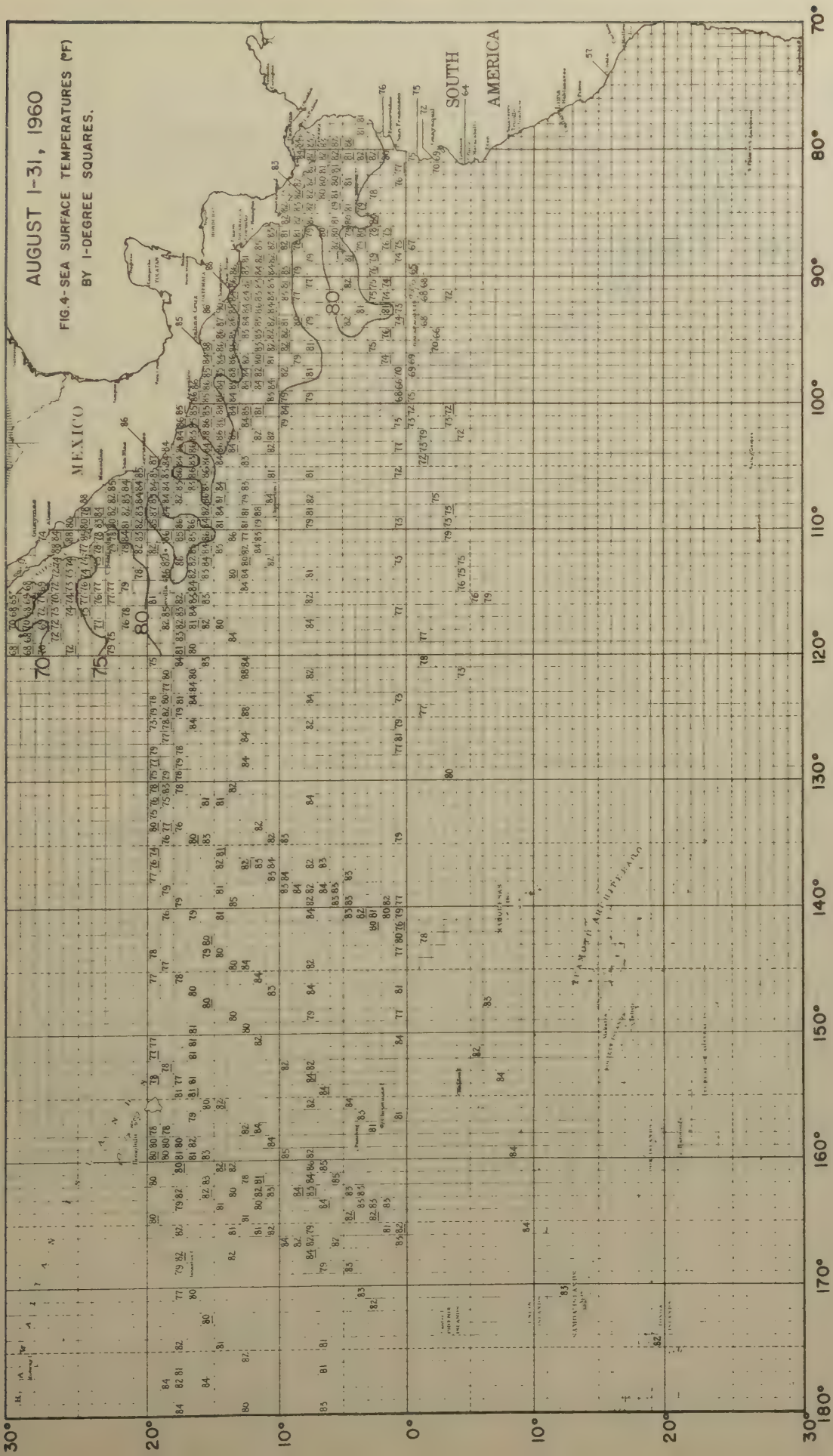
FIG. 2-DEVIATION OF SEA SURFACE TEMP. (°F)
FROM 30 YEAR MEAN. HATCHED
AREAS COLDER THAN AVERAGE.



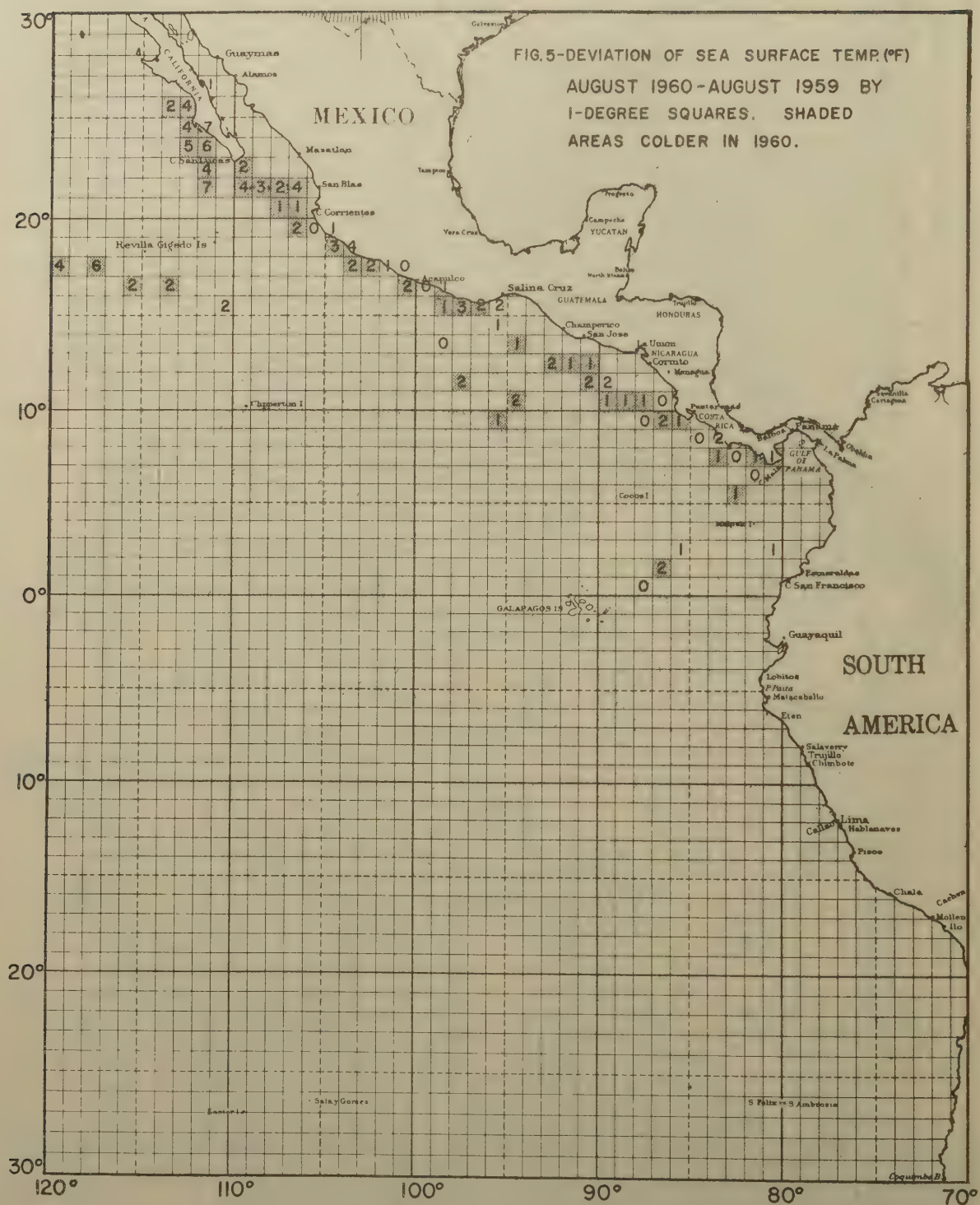
AUGUST 1-31, 1960

FIG.3-DEVIATION OF SEA SURFACE TEMP. (°F)
FROM AUGUST 1959. HATCHED AREAS
COLDER.





AUGUST 1-31, 1960
FIG. 4-SEA SURFACE TEMPERATURES (°F)
BY 1-DEGREE SQUARES.



FINAL NOTICE

(For those who have not already made their request)

AUGUST 1960

Director, Biological Laboratory
U. S. Bureau of Commercial Fisheries
P. O. Box 6121, Pt. Loma Station
San Diego 6, California

Please mail, until further notice, California Fishery Market News
Monthly Summary, Part II - Fishing Information.

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a business, government agency, etc. _____

Comments or suggestions: _____

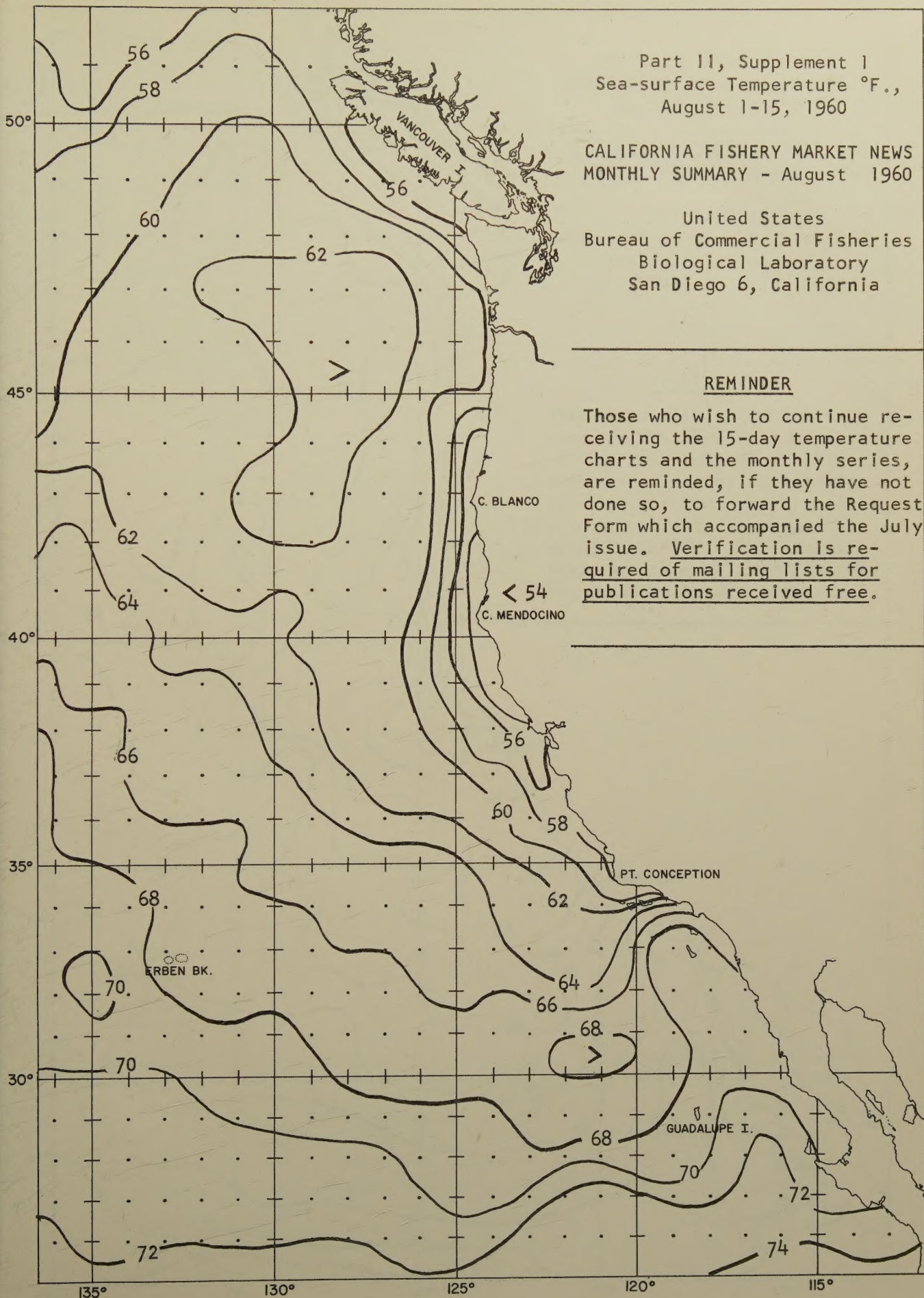
Part II, Supplement I
Sea-surface Temperature °F.,
August 1-15, 1960

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MONTHLY SUMMARY - August 1960

United States
Bureau of Commercial Fisheries
Biological Laboratory
San Diego 6, California

REMINDER

Those who wish to continue receiving the 15-day temperature charts and the monthly series, are reminded, if they have not done so, to forward the Request Form which accompanied the July issue. Verification is required of mailing lists for publications received free.



Part II, Supplement 2
Sea-surface Temperature °F.,
August 16-31, 1960

CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY-August 1960

United States
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Biological Laboratory
San Diego 6, California

Final Notice

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